DEVELOPING DUAL LANGUAGE PUBLICATIONS ON HOUSEHOLD ENVIRONMENTAL RISKS FOR THE HMONG, CAMBODIAN, AND LAOTIAN COMMUNITIES

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Abstract

This paper describes the process of developing dual-language publications used in a program to reduce household environmental risks in the Hmong, Cambodian, and Laotian communities of a major metropolitan area. The process was developed within the framework of risk communication and environmental justice. An immigrant community was identified as being underserved in terms of having access to educational materials on environmental risks in the home. Public participation included focus groups to give direction to the program, which included written publications as well as other delivery methods. Focus groups indicated that members of the communities preferred printed materials in both their native languages and English, and that they had very little or no knowledge of the health risks from exposure to radon, carbon monoxide, lead, and mold in the home. Based on information obtained from the focus groups, publications were developed on those topics. Several problems were encountered in the review and pilot-testing of the publications, solutions to which may be useful to others developing dual-language publications.

Conceptual Framework

Cooperative Extension Services (CES) around the country develop publications to benefit the health and well-being of their state's residents. Among the many topics addressed are environmental problems in the home that can affect human health. Prin-

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ciples of risk communication have been developed by the U.S. Environmental Protection Agency (EPA, 1996) about how to communicate effective messages to target audiences concerning health risks from contaminants in the environment. EPA defines risk communication as "the transmission of information about health and environmental risks, their significance, and the policies aimed at managing them" (EPA, 1996, p.1).

Much of the focus of the EPA recommendations about risk communication is on hazards that affect public health in an arena larger than the home environment, such as the dumping of toxic waste or hazards in public buildings. However, many of the same risk communication principles can also be applied to planning and implementing effective messages about environmental risks in the home. Note that among the risk communication objectives outlined by EPA, many apply not only to risks from environmental hazards outside the home environment but to hazards within the home environment as well:

- providing information to the public
- motivating individuals to act
- stimulating a response to emergencies
- arriving at the best possible decision for those involved
- helping the public determine what is an appropriate reaction to a particular risk
- allowing all perspectives to be considered in each situation
- contributing to the resolution of conflict (EPA, 1995).

Public participation is a guiding principle in good risk communication (EPA, 1996). Three reasons for involving the public in discussions about environmental risks are: 1) to gain a better understanding of the values held by the population; 2) to obtain "the commitment of established constituencies in order to bring about change" (EPA, 1996, p.1), and 3) to build capacity within the public group to make decisions about environmental risks. "Risk communication is a tool for ensuring inclusiveness in the process - it gives many different (including nontraditional) stakeholders a voice" (EPA, 1996, p.1).

To guide agencies to address the needs of nontraditional stakeholders, EPA has established the principle of environmental justice as a part of risk communication. Environmental justice means the fair treatment and meaningful involvement of all people, regardless of race, ethnicity, culture, income or education level with respect to the development, implementation and enforcement of environmental laws, regulations, and policies. Fair treatment means that no population, due to political or economic disempowerment, is forced to shoulder the negative human health and environmental impacts of pollution or other environmental hazards (EPA, 1995, para. 3).

Although this definition seems to restrict environmental justice to laws, regulations, and policies, the definition of the term can be broadened to include educational programs designed to help the public better understand environmental risks in the home environment. Claudio, Torres, Sanjurjo, Sherman, and Landgrin (1998) describe an environmental health sciences education program designed to protect children from the deleterious effects of environmental toxins. They conclude:

> As a result of this experience, we believe that the key to achieving environmental health, especially in communities of color where many children are at risk, is to empower residents to take charge of their environment by providing relevant educational opportunities (p. 849, 1998).

Other terms that have been used on the subject of inclusion in addressing target audiences are "ethical programming" and "capacity building." That is, Extension programs should not exclude audiences from receiving information about potential risks because of cultural, racial, ethnic, economic, or educational differences. And those programs should build capacity by assisting residents in "learning to learn, in questioning competently, and in seeking answers to questions" (Public Strategies Group, 1998, para. 3). Cooperative Extension Services have made a commitment not to discriminate (and a statement to that effect appears on CES literature), however, linguistic and educational differences may mean that our information is not equally accessible to all groups in formats that accomplish those purposes.

Background

Extension programs in Minnesota use publications written in English to convey messages to residents about environmental risks as well as other topics. However, during the early 1990s, Extension specialists and educators began working with groups in the inner cities that included recent immigrants. The particular issue that initiated the concern among Extension educators about the appropriateness of developing written materials in English was childhood lead poisoning among residents of the cities of Minneapolis and St. Paul. A neighborhood group contacted faculty from the University of Minnesota to ask for assistance in reducing the risk of childhood lead poisoning in the neighborhood. As faculty from several disciplines met with residents of the neighborhood, it became apparent that because of the diversity of the neighborhood population, educational publications and workshops that were in English only would exclude many residents affected by the problem. Because of a lack of basic knowledge about some of the groups needing the information, the educational team decided to conduct focus groups on the need for information and how to convey information about lead poisoning to the groups in need. The focus group procedure is described elsewhere (Bode & Corrin, 1994) and will be only briefly summarized here. This paper focuses on the development of dual-language publications for Southeast Asian audiences in the Twin Cities.

Need

Housing Conditions

As the educational team met with the neighborhood residents and learned more about the neighborhood, they became aware that there were many potential environmental risks to the residents from sources within their homes. Of the nearly 300,000 rental housing units in the metropolitan area, half were built before 1970 (U.S. Bureau of the Census, 1990), before lead was banned in paint. Much of the inner-city housing

is of older housing stock, and some is not well-maintained. The risk of lead poisoning from leaded paint and lead in the soil can be high in these neighborhoods. In addition, Twin Cities radon levels put much of the metropolitan area in the high-risk zone (EPA,1998). Poorly maintained space- and water-heating systems and improper use of other combustion appliances can result in elevated levels of carbon monoxide in homes. Weatherization strategies that tighten homes can result in high moisture levels in homes under certain conditions. The scope of the project was broadened, from focusing just on lead poisoning, to reducing risks associated with several environmental conditions.

The Population

More than 33,000 Southeast Asian people lived in the Minneapolis-St. Paul metropolitan area in 1990 (U. S. Bureau of the Census, 1990). Of those, half (17,317) were Hmong, 8,099 were Vietnamese, 5,214 were Laotian, and 2,228 were Cambodian. Since 1990, the cultural agencies serving those immigrant groups estimate that those populations have more than doubled in the Twin Cities (Yang & Murphy, 1993). Of all Asian households in the metropolitan area identified in the 1990 Census, over 40% were classified as being linguistically isolated. Among children (ages 5 to 17) and the non-elderly adult population (ages 18 to 64), 29% of those who spoke an Asian language spoke English "not well" or "not at all." That percentage rose to 78% among the elderly population (ages 65 and over) (U.S. Bureau of the Census, 1990). Over 35% of Asian households in the metropolitan area had household incomes of less than $15,000 in 1989 (U.S. Bureau of the Census, 1990).

A study by the Hmong American Partnership reported that 87% of the Hmong families in the Minneapolis-St. Paul area lived in rental housing (Yang & Murphy, 1993). An indication of the quality of housing is the adequacy of plumbing facilities; although only 2.5% of Asian households lacked complete plumbing facilities, this was the highest percentage among all minority groups (U.S. Bureau of the Census, 1990). A shaman for a Hmong clan indicated that Minnesota housing is not what they were accustomed to nor had expected to find. Differences in conditions between their native housing and U.S. housing are the result of different climatic conditions, the mobility of the residents, and rural-urban differences. These differences result in unfamiliarity with the type of construction, materials, and heating systems used.

The Southeast Asian groups were identified as being at risk from potential indoor environmental hazards because of their limited English-speaking and reading skills, lack of knowledge about how to access information on environmental and health-related issues, and residential environments that may put them at risk of exposure to environmental hazards.

Process

Focus Groups

To better understand the scope of the problem and to design an educational program that would best communicate potential risks to this targeted population, focus

groups were conducted. Because the original focus of the program was on lead poisoning, the purpose of the focus groups was to learn how much the residents of the neighborhood knew about lead contamination and to discuss with them educational approaches that would be effective in a prevention program. In addition, participants were asked about lifestyle behaviors and dietary practices that affect the vulnerability of children to lead contamination. The original set of discussion questions was written in English. Working through cultural organizations in the city, bilingual facilitators were identified who could speak English as well as their native language – either Hmong, Cambodian, or Vietnamese. The Extension educators met with the three facilitators and conducted a workshop to familiarize them with the project and to explain each question. Each of the three facilitators was given the charge of translating the questions into his/her native language, recruiting 8-10 people from the cultural group to be part of the focus group, facilitating the focus group in native language, and providing an oral briefing and written report on the focus group discussion.

Three focus groups were conducted–one in Hmong, one in Cambodian, and one in Vietnamese; these were the Southeast Asian groups with the highest percentage of residents in the neighborhood being targeted for lead poisoning education. The actual number of participants in each focus group varied from 8 to 12. The facilitators conducted the discussions in their native languages using the questions developed. Although an Extension educator was present at each session, she did not participate but was only introduced to the group as part of the introduction to what the session was about. The sessions were recorded, and, from those recordings, the facilitator provided a written report as well as oral briefings on the discussions. Sessions were held in locations familiar to the groups in the neighborhoods where the participants lived. They were generally 1-1/2 to 2 hours in length.

The reports from the facilitators indicated that the participants were largely unfamiliar with the problem of lead poisoning, although the Vietnamese group knew more about the problem than the other two groups. All of the participants were eager for information about how to prevent lead contamination. They expressed a desire for written materials in their own language, and some suggested that the information be in both English and their native language. Some suggested that written materials be targeted at both children and adults, because it is sometimes the children in the family who are able to read. Pictures were mentioned as being important to understanding the materials. Participants would be receptive to learning via video tapes if the tapes were in their native languages. Specific information was obtained about their diets, lifestyles, cleaning supplies used (to assess how to teach about cleaning lead dust as a prevention technique), and other issues related to reducing exposure to lead dust.

As a result of this information and visits with others familiar with the Southeast Asian immigrant communities, the decision was made not to develop publications in Vietnamese, because there is a strong social service agency that provides supportive services to the Vietnamese community. This agency not only provides educational information in a format useable by Vietnamese immigrants but will be responsive to questions on the lead poisoning topic. As the project was expanded beyond a neighbor-

hood lead project to a metropolitan-wide project for Southeast Asian communities, the decision was made to produce a set of materials in Laotian, another large cultural group that may be underserved because of linguistic and cultural barriers. Although the targeted neighborhood does not have a large Laotian population, there is a large Laotian community living in other neighborhoods in the Twin Cities.

Writing the Publications

The focus group input affected the content of the publications that were developed, including:

- the current level of understanding of risks associated with lead in the home;
- the actions to take to reduce risks; and
- the desired format for the publications.

As funding became available, the project was expanded to include not only publications on lead, but also on radon, carbon monoxide, and mold. The publications were co-authored by members of the housing faculty, a building scientist who investigates sources of carbon monoxide in residences, and an environmental health consultant specializing in biological contaminants, in consultation with partners from the fields of health, safety, and housing. There were several major steps to the development of the publications after the initial draft. First, the English text was simplified for low-literacy audiences by the editor because it is easier to make a translation from a simple and clear text and immigrants learning English need the low-literacy text. Second, the simplified English text, was reviewed by professionals and English-speaking members of the target communities. It was then rewritten, as needed, and sent to the translators.

Translations

Translators were located through the University of Minnesota Program in Translation and Interpreting as well as by asking members of the ethnic communities. Because none of the original authors could read the non-English languages, it was important that the translators be recommended by others in their communities. For each language, at least two translators were used - one to make the original translation to English and the other to check the translation.

The typeface for the Cambodian and Laotian languages does not use Roman characters. Because the University of Minnesota Extension Service's printing service did not have the appropriate characters available, the translators also served as desktop technicians. They used computers with the characters needed and provided the text for the translation to fit into the space provided on the left-hand side of the page. The printer scanned in the non-English language text as a graphic when printing the Cambodian and Laotian translations. Because the Hmong language uses Roman characters, the translator provided both hard copies of the text and a word-processing disk version. The printer used the disk version to produce the text from a desktop program.

There was an interesting problem with the Hmong translation. There are several variants of the Hmong language; after three of the publications had been translated into White Hmong, another translator used Blue Hmong for the fourth publication. The

specifications had not asked for White Hmong. When the difference was pointed out, it was re-translated into White Hmong. (White Hmong is used in official publications, whereas Blue Hmong is used more casually, such as in newspapers.)

Another problem was found with the Hmong translation during use in the community. A Hmong house inspector read the materials and the materials were reprinted in a Hmong newspaper. Several important words did not have a comparable word in the non-English language. For example, there is no Hmong word for carbon monoxide, and it was first translated as "poisonous gas." The house inspector felt that term did not adequately communicate the risk from CO. Another translator then used the term "bad smelly gas." This term is a technically inaccurate description, (because CO has no odor), so the term "poisonous gas" was used with the English words, "carbon monoxide."

The Format

The focus groups had requested that both English and the native language be in the same publication. Several formats were considered, including using English on one page and the non-English language on the facing page. Because illustrations were being used, this format would mean duplicating the illustrations on each side of the paper. It was decided to use a two-column format with English in the right column, the non-English language in the left column, and the illustrations in the center between the two columns.

Illustrations

The publications include both text and illustrations about health risks, symptoms, and corrective actions to take in order to reduce risks. There are two types of illustrations: a) the technical to illustrate a principle or a type of equipment, and b) people carrying out or demonstrating a recommended practice. An example of a technical illustration is Figure 1, venting of carbon monoxide gases out of the house. Figure 2 is an example of a practice, cleaning areas that have lead dust or chipped and peeling paint.

Pilot-testing

The publications were pilot-tested with members of the targeted communities before a final printing; this procedure resulted in minor changes in content and major changes in the illustrations. They approved the final illustrations.

The authors wanted to have one set of illustrations for each publication (for example, one set for all of the radon publication translations). It was decided that illustrations that included drawings of people should be "generic"; that is, facial features and clothing that do not reflect any particular culture. The first illustrations included drawings of "faceless" people - the facial features were not included. When the publications with those illustrations were pilot-tested, the faceless illustrations were found to be unacceptable by the target audience. A comment given was that they "were saddened that their faces were not found to be acceptable" for the illustrations. The illustrator

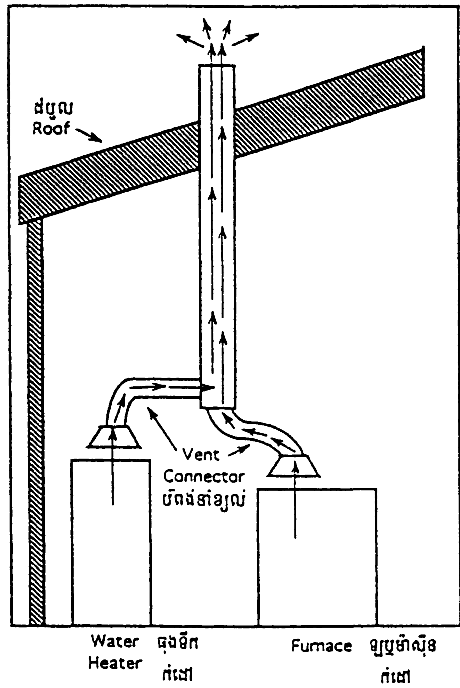

Figure 1. Example of a technical illustration

Figure 2. Example of an illustration of a practice

added simple features - eyes, nose, and mouth - to the drawings and they were found to more acceptable.

Results

The goal of this project was to create educational tools to communicate to culturally underserved audiences about the environmental risks in their homes. The models used to reach the goal derive from risk communication principles and incorporate principles of environmental justice, capacity building, and ethics in programming. One of several methods used to accomplish this goal was to develop dual-language publications that are both accurate, and culturally and linguistically appropriate. To involve the public in designing the educational materials, focus groups were held. Using the recommendations of the focus groups, four-page dual-language publications, one on each of the topics of lead, radon, carbon monoxide, and molds in homes, were written, translated, and printed in Hmong, Cambodian, and Laotian, with English. The dual-language publications allow people who are learning English to be able to read the English as well as their native language. These materials were subsequently used by bilingual peer community teachers in an educational program on environmental hazards and in bilingual homeowner education programs. They were also made available to housing and health services, and to the refugee and mutual assistance agencies serving Southeast Asian communities.

The publications were evaluated by the peer teachers after being used; in both written and oral evaluations the teachers reported that the format of the dual-language publications provided a simple way to teach about the health risks, symptoms, and corrective actions needed to reduce risks from lead, radon, carbon monoxide, and molds in homes. The publications became teaching guides for the peer teachers, giving them the correct terms and expressions for talking about the contaminants and for reducing risks. Because of the lack of comparable terms between languages, the peer teachers said that the illustrations were particularly important for helping to convey the messages in the text.

It is a testimony to the effectiveness of these materials that the families taught by the peer teachers requested that the materials also be used in the homeowner education program. In addition, the Hmong translations of the carbon monoxide and lead topics were reprinted in a Hmong-American newspaper, and the information on carbon monoxide was used in a radio broadcast. The St. Paul school system has used the Hmong publications in English classes for Hmong students. At least two thousand copies of the lead publications have been distributed; the Minnesota Department of Health purchased more than 1000 copies to distribute through their offices. In addition, copies of the publications are available on the Internet.

In conjunction with a peer teacher program, 300 Southeast Asian families have tested their homes for radon, lead, and carbon monoxide. In some homes, very dangerous levels of carbon monoxide have been detected and remedial action has been taken.

Recommendations

The dual-language publication authors were committed to producing educational materials that would be accessible to underserved audiences, and they received EPA funding to make this possible for Southeast Asian groups. However, we found the development of these dual-language publications to be a process that includes more steps than producing an English-language only publication. It is recommended that educators developing materials for minority groups put together focus groups or advisory groups, using members of the target communities. These groups can help identify what is known in their communities about the issue being considered, and what educational strategies could be used in their communities. If a publication is being developed, an advisory group or a university program in translation and interpreting can identify translators, identify resources for overcoming problems such as characters needed for printing, review both the text and the illustrations, conduct a pilot program, and make recommendations for improving the publication. If a language has several dialects, it will be necessary for the advisory group to decide on the preferred version. In the case of a short publication, as these were, a 2-column format using English as one of the languages is recommended.

Although it may be difficult to identify appropriate persons to be part of the advisory group, starting with local leaders in the ethnic community should result in finding knowledgeable advisory group members, increasing the likelihood of their participation in the group. Community members are more likely to participate if a respected community leader endorses the project. A sufficient amount of time should be allocated for the process, as it is likely to take months to develop the necessary relationships with members of a community that is unfamiliar with Extension, and even more months to translate, print, and pilot-test materials. Although development costs vary greatly, depending on the availability of translators and the accessibility to the typeface needed for printing, it is estimated that these costs could be double those of developing an English-language-only publication.

Dual language publications are an important tool to help ensure healthy living conditions in immigrant communities. People in the community who are bilingual often have more than one job and may not be able to take the time to translate English information and for technical information, may not have the background to translate accurately. Perhaps the greatest reward from a program like this is the gratitude expressed by members of the immigrant communities. It is usually reported as "thank you for the help and continued support for our community."

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